REMARKS

Claims 1-27 are presently pending. Various claims have been amended herein to correct a spelling error introduced into the claims and, accordingly, the word "traversing" has been substituted for the word "transversing" throughout. This amendment is not a narrowing amendment and merely corrects a spelling error. Claims 26 and 27 have been added.

I. THE 35 U.S.C. § 103 REJECTION OF CLAIMS 1, 2, 5-10, 12-16 AND 18-25

Claims 1, 2, 5-10, 12-16 and 18-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Saarinen et al. (US 5,033,602)(hereinafter "Saarinen") in view of Rasmussen et al. (US 5,277,651)(hereinafter "Rasmussen"). This rejection is respectfully traversed.

Saarinen is alleged to disclose a "memory (column 4 lines 32-38) which compares a generated signal to a threshold value (column 3 lines 43-52), a light source (*see* Figure 1 element 3), a light detector that is a photo detector (*see* Figure 1 element 4), a controller (*see* Figure 1 element 9) adapted to determine the denomination of the coin (column 4 line 32 through column 5 line 20), a light guide disposed along the coin path (*see* Figure 1 element 5), and a diverter (*see* Figure 1 element 10) controlled by the controller (column 5 lines 14-20."

Saarinen is acknowledged not to disclose a rotatable disc, an encoder, and a stationary sorting head. Rasmussen is cited to alleged to disclose a "similar device that includes a rotatable disc . . . an encoder . . . and a stationary sorting head (column 2 lines 15-25) for the purpose of monitoring the precise position of each separate coin from the time that coin passes a fixed counting station until the coin is sorted and discharged (column 1 lines 24-35)."

The Examiner alleges that "[i]t would have been obvious for a person of ordinary skill in the art at the time of the applicant's invention to modify Saarinen et al. by utilizing a rotatable disc, an encoder, and a stationary sorting head, as disclosed by Rasmussen et al., for the purpose of monitoring the precise position of each separate coin from the time that coin passes a fixed counting station until the coin is sorted and discharged."

1. CLAIMS 1, 2, 5-9

Independent claim 1 recites a coin processing system for processing a plurality of coins of mixed denominations. This coin processing system comprises "a rotatable disc for imparting motion to the plurality of coins," "an encoder attached to the rotatable disc for producing an

encoder pulse for each incremental movement of the rotatable disc," and "a memory adapted to store master denominating characteristic information." The coin processing system also comprises "a stationary sorting head having a lower surface generally parallel to and spaced slightly away from the rotatable disc, the lower surface forming a coin path for directing the movement of each of the coins and a coin exit region for sorting and discharging coins of particular denominations." A light source is configured to output "a light beam that traverses the coin path." A light detector is configured to detect the light beam and to generate "a light-detection signal indicative of detecting the light beam, each coin moving along the coin path passing through the light beam resulting in the suspension of the generation of the light-detection signal." The coin processing system also includes "a controller adapted to receive the encoder pulses from the encoder, the controller adapted to receive the light-detection signal from the light detector, the controller being adapted to determine the number of encoder pulses received during a period of non-receipt of the light-detection signal caused by each coin passing through the light beam, the controller being adapted to compare the determined number of encoder counts to the stored master denominating characteristic information upon resuming to receive the light-detection signal form the light detector."

As an initial matter, "[i]f a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the reference are not sufficient to render the claims *prima facie* obvious." *In re Ratti*, 270 F.2d 810 (CCPA 1959). The coin processing system of Saarinen is a rail sorter system, as evidenced by the orientation of the coin 1 shown in FIG. 1. Moreover, Saarinen shows that "the column-like light source 3 is positioned in an upright position in front of the coin path 2" (*see* col. 3, lines 3-4). Saarinen discloses that "an image of the light source is projected through a vertically elongated slit in the housing" (col. 3, lines 4-6). In contrast, Rasmussen discloses a disc-type coin sorter (*see, e.g.*, FIG. 1). Modifying Saarinen "by utilizing a rotatable disc, an encoder, and a stationary sorting head, as disclosed by Rasmussen et al.," as alleged by the Examiner, would change the principle of operation of the prior art invention being modified and is impermissible. The combination is, therefore, non-obvious for at least this reason and reconsideration of and withdrawal of this rejection is requested for at least this reason.

Still further, "[i]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984)(emphasis added). If Saarinen were modified "by utilizing a rotatable disc, an encoder, and a stationary sorting head, as disclosed by Rasmussen et al.," as alleged by the Examiner, this modification would render Saarinen unsuitable for its intended purpose on many levels. The device for identifying coins disclosed by Saarinen requires a column-like light source 3 positioned in an upright position in front of the coin path 2 and an image of the light source is projected through a vertically elongated slit in the housing" (col. 3, lines 3-8; col. 6, lines 22-26). This "column-like light source" comprises column elements 3a and 3b (*see* col. 3, lines 62-68). A "lens assembly 5 enables the light column 3 to be projected to the photosensitive sensor 4" (col. 3, lines 35-36; col. 6, lines 32-36; FIG. 1). A junction between the LED columns 3a and 3b is positioned in the middle of the center of the lens assembly 5." (col. 4, lines 4-6). The coin path 2 is disposed to carry the coins vertically past the column-like light source 3 such that the area of the front (or back) of each coin (*i.e.*, the "plane of the coin") occludes or partially occludes the light from the light source that is incident to the lens assembly (*see* col. 3, lines 18-21). Transferring this disclosed system to a coin processing system comprising a rotatable disc and a stationary sorting head, as alleged, would require placement of the "column-like light source 3" in the stationary sorting head (or rotatable disc) and would require placement of the "lens assembly 5" in the other one of the stationary sorting head (or rotatable disc) so as to maintain the relative orientations of the coins, the light source, and the lens assembly. Such placement of the "column-like light source 3" and the "lens assembly 5" would render the Saarinen invention unsatisfactory for its intended purpose as one of the stationary components (*i.e.*, both the light source 3 and lens assembly 5 in Saarinen are stationary) would be disposed on the rotatable disc and, consequently, would not be disposed in opposition to one another but for a portion of the rotation of the rotatable disc. Reconsideration and withdrawal of this rejection is requested for at least this reason.

Moreover, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim

against the prior art". *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970); *see also In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995). Saarinen fails to disclose or suggest "a light detector for detecting the light beam . . . each coin moving along the coin path passing through the light beam resulting in the suspension of the generation of the light-detection signal," as recited by claim 1. Instead, Saarinen discloses that "the light source is covered by the corn [*sic*: coin] when it passes along the path in an amount corresponding, in a maximum case, to the diameter of the coin, and the difference between the maximum and minimum amount of light" (col. 3, lines 10-15). Saarinen further discloses that "the measurement is based *only* on the amount of light *which is able to pass the coins when they traverse the measuring point*" (col. 2, lines 32-35)(emphasis added). Accordingly, Saarinen fails to disclose "a light detector for detecting the light beam . . . each coin moving along the coin path passing through the light beam resulting in the suspension of the generation of the light-detection signal." Reconsideration and withdrawal of this rejection is requested for at least this reason.

Saarinen also fails to disclose or suggest "a controller adapted to receive the encoder pulses from the encoder, the controller adapted to receive the light-detection signal from the light detector, the controller being adapted to determine the number of encoder pulses received during a period of non-receipt of the light-detection signal caused by each coin passing through the light beam, the controller being adapted to compare the determined number of encoder counts to the stored master denominating characteristic information upon resuming to receive the light-detection signal form the light detector." Instead, for the reasons noted above, Saarinen discloses only that "the measurement is based *only* on the amount of light *which is able to pass the coins when they traverse the measuring point*" (col. 2, lines 32-35)(emphasis added). Saarinen does not disclose, for example, a controller configured "to determine the number of encoder pulses received during a period of non-receipt of the light-detection signal caused by each coin passing through the light beam" and being adapted "to compare the determined number of encoder counts to the stored master denominating characteristic information upon resuming to receive the light-detection signal form the light detector." Instead, Saarinen bases the determination of denomination on a measured "amount of light." Likewise, as to claim 2, for example, Saarinen fails to disclose or suggest that "the controller is adapted to determine the denomination of the coin passing through the light beam when the determined number of encoder pulses favorably

compares to the stored master denominating characteristic information." Rasmussen appears unable to make up for this deficiency. FIG. 16 and encoder sensor 212 therein, cited by the Examiner, relates to an encoder adapted to monitor the angular movement of the disc 13 using indicia 211. This does not disclose or suggest, for example, a controller "adapted to determine the number of encoder pulses received during a period of non-receipt of the light-detection signal caused by each coin passing through the light beam, the controller being adapted to compare the determined number of encoder counts to the stored master denominating characteristic information upon resuming to receive the light-detection signal form the light detector." Reconsideration and withdrawal of this rejection is requested for at least this reason.

In view thereof, it is also noted that Saarinen's teaching of basing "the measurement . . . only on the amount of light which is able to pass the coins when they traverse the measuring point" (col. 2, lines 32-35), Saarinen *teaches away from* the "light detector for detecting the light beam . . . each coin moving along the coin path passing through the light beam resulting in the suspension of the generation of the light-detection signal," recited in claim 1. Such evidence of teaching away constitutes evidence of non-obviousness. *In re Bell*, 991 F.2d 781, 26 USPQ2d 1529 (Fed. Cir. 1993); *Specialty Composites v. Cabot Corp.*, 845 F.2d 981, 6 USPQ2d 1601 (Fed. Cir. 1988); *In re Hedges*, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986); *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983); *In re Marshall*, 578 F.2d 301, 198 USPQ 344 (CCPA 1978). Saarinen must be considered in its entirety, including portions that would lead one skilled in the art away from the claimed invention. *See W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983). Reconsideration and withdrawal of this rejection is requested for at least this reason.

Still further, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." 916 F.2d at 682 (*see also In re Fritch*, 972 F.2d at 1260 (Fed. Cir. 1992)). The Examiner must show reasons why a skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the

elements from the cited prior art references for combination in the manner claimed. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998).

Moreover, the showing must be clear and particular. *See, e.g., In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements, standing alone, are not "evidence". *McElmurry v. Arkansas Power & Light Co.*, 995 F.2d 1576, 1578 (Fed. Cir. 1993). "The factual inquiry whether to combine references must be thorough and searching". *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52 (Fed. Cir. 2001). It must be based on objective evidence of record. *In re Sang-Su Lee*, 277 F.3d 1338, 1345-46 (Fed. Cir. 2001); *see also In re Thrift, 298 F.3d 1357, 1363 (Fed. Cir. 2002).* "A showing of a suggestion, teaching, or motivation to combine the prior art reference is an 'essential component of an obviousness holding'" *Brown & Williamson Tobacco Corp. v. Phillip Morris, Inc.*, 229 F.3d 1120, 1124-25 (Fed. Cir. 2000); *quoting C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1352 (Fed. Cir. 1998). The need for specificity pervades this authority. *In re Sang-Su Lee, supra, citing In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000)("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed"). Thus, the factual question of motivation cannot be dispensed with by a generalized assertion.

In the present case, the Examiner has stated that "[i]t would have been obvious for a person of ordinary skill in the art at the time of the applicant's invention to modify Saarinen et al. by utilizing a rotatable disc, an encoder, and a stationary sorting head, as disclosed by Rasmussen et al., for the purpose of monitoring the precise position of each separate coin from the time that coin passes a fixed counting station until the coin is sorted and discharged." However, the Examiner has not set forth clear and particular evidence showing that the desirability of the combination. As noted above, the proffered combination would amount to a substantial redesign of the system of Saarinen and the Examiner has not pointed to any suggestion or need in Saarinen for "monitoring [of] the precise position of each separate coin from the time that coin passes a fixed counting station until the coin is sorted and discharged." Saarinen discloses a rail sorter (*see* FIG. 1) wherein the coin is vertically disposed to roll between the column-like light source 3 and the lens assembly 5. The Examiner alleges that Rasmussen discloses a rotatable disc, an encoder, and a stationary sorting head "for the purpose of monitoring the precise position of each

separate coin from the time that coin passes a fixed counting station until the coin is sorted and discharged," but the Examiner fails to show why such monitoring would be pertinent to Saarinen. Rasmussen discloses such monitoring in the context of a specific type of coin sorting apparatus (*i.e.*, a disc-type coin sorter). This type of sorter is different than that of Saarinen and the problems and solutions disclosed by Rasmussen are not necessarily relevant to the problems presented by the technology of Saarinen, nor does such disclosure of Rasmussen necessarily provide a solution to such problems which may attend the technology of Saarinen. Accordingly, the Examiner has failed to set forth clear and particular evidence showing that the desirability of the combination. Reconsideration and withdrawal of this rejection is requested for at least this reason.

Still further, it is submitted that the Examiner's reasoning fails to discharge the judicial requirement for identifying a basis why one having ordinary skill in the art would have been realistically motivated to modify Saarinen in view of Rasmussen to arrive at the claimed invention. *See In re Rouffet, supra; In re Dembiczak, supra.* It is submitted that one of ordinary skill in the art at the time of the invention would not have sought to substantially redesign the system in the manner alleged. For example, why would one of ordinary skill in the art at the time of the invention substantially redesign the system of Saarinen? The Examiner alleges that it would be "for the purpose of monitoring the precise position of each separate coin from the time that coin passes a fixed counting station until the coin is sorted and discharged." However, one of ordinary skill in the art at the time of the invention would have readily appreciated that there would be other ways to achieve this purpose without substantially redesigning the system in the manner alleged by the Examiner. For example, a plurality of sensors could be disposed along a length of the rail or at selected positions along the rail to monitor a position of a coin, with information about the velocity of a coin being used to determine the position of the coin at positions between the sensors. Such a modification would not amount to a substantial redesign of the system of Saarinen and thus would provide a reasonable solution to the asserted problem set forth by the Examiner. Applicant submits that conversion of the rail type sorter of Saarinen to a disc-type sorter, with the associated wholesale redesign of the measurement system of Saarinen to accommodate such modifications, would not reasonably have been viewed as a solution to the asserted problem set forth by the Examiner. The availability of ready and

minimally problematic alternatives to the Examiner's proposed combination of Saarinen with Rasmussen demonstrates that, even were it to be assumed, *arguendo*, that it would have been desirable to modify Saarinen to monitor the precise position of each separate coin from the time that coin passes a fixed counting station until the coin is sorted and discharged, there is no motivation that would have led one of ordinary skill in the art to modify the prior art reference *in the manner suggested by the Examiner.* Reconsideration and withdrawal of this rejection is requested for at least this reason.

It is further noted that the Examiner's statement of rejection is devoid of any evidence that Saarinen and Rasmussen, whether taken singly or in combination, teach or suggest "a diverter disposed along the coin path beyond the light source, the diverter being moveable between a first position for permitting coins to proceed to the plurality of exit channels and a second position for diverting coins to a reject region" (claim 8) or, further thereto, that the "controller causes the diverter to move from the first position to the second position when the number of encoder pulses determined when a coin passes through the light beam does not favorably compare to the stored master denominating characteristic information." (claim 9). Accordingly, the Examiner has failed to discharge the burden of setting forth a *prima facie* case of unpatentability as to claims 8 and 9. The Examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability. *See, e.g., In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The *prima facie* showing must be set forth in a well-reasoned statement. Reconsideration and withdrawal of this rejection of claims 8 and 9 is requested for at least this reason.

2. CLAIMS 10, 12-15

Independent claim 10 recites a "method for processing coins with a coin processing system including a coin path and a coin exit region for sorting and discharging coins of particular denominations, the system including a light source for emitting a light beam traversing the coin path." This method includes the acts of "generating a light-detection signal with a light detector, the light-detection signal being indicative of the light detector detecting the light beam traversing the coin path," "receiving the light-detection signal with a controller," "moving a coin along the coin path," and "interrupting, with the coin moving along the coin path, the light beam traversing the coin path." The method further includes the acts of "counting, with the controller, the

number of encoder pulses generated by an encoder during the interruption of the light beam," and "comparing the counted number of encoder pulses to a plurality of stored numbers of encoder pulses corresponding to the particular coin denominations."

As noted above, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka, supra.* Saarinen fails to disclose or suggest "interrupting, with the coin moving along the coin path, the light beam traversing the coin path," as recited by claim 10. Instead, Saarinen discloses that "the light source is covered by the corn [*sic*: coin] when it passes along the path in an amount corresponding, in a maximum case, to the diameter of the coin, and the difference between the maximum and minimum amount of light" (col. 3, lines 10-15). Saarinen further discloses that "the measurement is based *only* on the amount of light *which is able to pass the coins when they traverse the measuring point*" (col. 2, lines 32-35)(emphasis added). Accordingly, Saarinen does not disclose or suggest "interrupting, with the coin moving along the coin path, the light beam traversing the coin path." In fact, Saarinen's teachings (*e.g.*, that "the measurement . . . only on the amount of light which is able to pass the coins when they traverse the measuring point"(col. 2, lines 32-35)), *teach away from* "interrupting, with the coin moving along the coin path, the light beam traversing the coin path," recited by claim 10. As noted above, such evidence of teaching away constitutes evidence of non-obviousness (citations omitted). Saarinen must be considered in its entirety, including portions that would lead one skilled in the art away from the claimed invention. *See W.L. Gore & Associates, Inc. v. Garlock, Inc., supra.* Reconsideration and withdrawal of this rejection is requested for at least this reason.

Additionally, for the reasons noted above, which are incorporated herein (for brevity), Applicant submits that the modification and combination of the prior art in accord with the Examiner's suggestion would impermissibly change the principle of operation of Saarinen. The combination is, therefore, submitted to be non-obvious for at least this reason and reconsideration and withdrawal of this rejection is requested for at least this reason.

Further, for the reasons noted above, which are incorporated herein (for brevity), Applicant submits that the modification and combination of the prior art in accord with the Examiner's suggestion would render Saarinen being modified unsatisfactory for its intended purpose. Accordingly, it is submitted that there is no suggestion or motivation to make the

proposed modification (*see In re Gordon, supra*). Reconsideration and withdrawal of this rejection is requested for at least this reason.

Still further, for the reasons noted above, which are incorporated herein (for brevity), Applicant submits that the Examiner has not discharged the burden to set forth a *prima facie* case of obviousness under 35 U.S.C. § 103, as the Examiner has failed to demonstrate, using clear and particular evidence, a suggestion or motivation in the references supporting such combination. Reconsideration and withdrawal of this rejection is requested for at least this reason.

Also, for the reasons noted above, which are incorporated herein (for brevity), Applicant submits that the Examiner has not discharged the burden to set forth a *prima facie* case of obviousness under 35 U.S.C. § 103, as the Examiner has failed to identifying a basis why one having ordinary skill in the art would have been realistically motivated to modify Saarinen in view of Rasmussen to arrive at the claimed invention. Reconsideration and withdrawal of this rejection is requested for at least this reason.

3. CLAIMS 16, 18-21

Independent claim 16 has been amended herein to depend from independent claim 10. Further to claim 10, claim 16 and claims 18-21 dependent thereupon additionally recite "generating at least a first signal event corresponding to an interruption of the light beam by a leading edge of the coin moving along the coin path," "generating at least a second signal event when the light beam is incident to the light detector following the act of the generating at least a first signal event," "counting a number of encoder pulses occurring between the acts of generating at least the first signal event and generating at least the second signal event," and "comparing at least the counted number of encoder pulses to a plurality of stored numbers of encoder pulses corresponding to the particular coin denominations."

For at least the reasons noted above (see above sections), which are incorporated herein in their entirety, but are otherwise omitted for brevity, Applicant respectfully submits that the applied combination of references fails to support an obviousness rejection under 35 U.S.C. § 103.

Particularly as to claims 16 and 18-21, the applied combination of Saarinen and Rasmussen does not disclose or suggest each claim limitation of claims 16 and 18-21. For example, Saarinen fails to disclose or suggest "counting a number of encoder pulses occurring

between the acts of generating at least the first signal event and generating at least the second signal event" and "comparing at least the counted number of encoder pulses to a plurality of stored numbers of encoder pulses corresponding to the particular coin denominations." Instead, as noted above, Saarinen discloses that "the measurement is based *only* on the amount of light *which is able to pass the coins when they traverse the measuring point*" (col. 2, lines 32-35)(emphasis added). Rasmussen appears unable to make up for this deficiency.

4. CLAIM 22 AND CLAIMS 23-25

Independent claim 22 recites a "method for determining the denomination of a coin with a disk-type coin processing system," comprising the acts of "moving a coin along a coin path with a rotatable disk," "generating an encoder pulse for each incremental movement of the rotatable disk," "directing a light beam to traverse the coin path," and "interrupting the light beam traversing the coin path for a period in which the coin is moving through the light beam traversing the coin path." The method further includes the acts of "counting a number of encoder pulses occurring during the period," and "comparing the counted number of encoder pulses to a plurality of stored numbers of encoder pulses corresponding to the particular coin denominations." Independent claim 23 recites "a method for determining the denomination of a coin with a disk-type coin processing system," comprising the acts of, *inter alia*, "detecting the light beam with a light detector," "developing a signal at the light detector indicating the presence of a coin in the coin path," "counting a number of encoder pulses occurring while developing the signal at the light detector," and "comparing the counted number of encoder pulses to a plurality of stored numbers of encoder pulses corresponding to the particular coin denominations."

Again, for at least the reasons noted above, which are incorporated herein but are otherwise omitted for brevity, Applicant respectfully submits that the applied combination of references fails to support an obviousness rejection under 35 U.S.C. § 103.

First, for the reasons noted above, the applied combination of Saarinen and Rasmussen does not disclose or suggest each claim limitation of claim 22 or of claims 23-35. Saarinen fails to disclose or suggest, for example, "interrupting the light beam traversing the coin path for a period in which the coin is moving through the light beam traversing the coin path," as recited by claim 22. Instead, as noted above, Saarinen discloses that "the measurement is based *only* on the

amount of light *which is able to pass the coins when they traverse the measuring point*" (col. 2, lines 32-35)(emphasis added). Accordingly, Saarinen does not disclose or suggest "interrupting the light beam traversing the coin path for a period in which the coin is moving through the light beam traversing the coin path." Rasmussen appears unable to make up for this deficiency. Reconsideration and withdrawal of this rejection is requested for at least this reason.

Second, for the reasons noted above, the applied combination of Saarinen and Rasmussen fails to disclose or suggest, for example, "counting a number of encoder pulses occurring during the period" and "comparing the counted number of encoder pulses to a plurality of stored numbers of encoder pulses corresponding to the particular coin denominations," as recited by claim 22. The applied combination of Saarinen and Rasmussen likewise fails to disclose or suggest, for example, "developing a signal at the light detector indicating the presence of a coin in the coin path," "counting a number of encoder pulses occurring while developing the signal at the light detector," and "comparing the counted number of encoder pulses to a plurality of stored numbers of encoder pulses corresponding to the particular coin denominations," as recited by claims 23-25. As noted above, Saarinen teaches a measurement based only on the amount of light which is able to pass the coins when they traverse the measuring point. FIG. 16 of Rasmussen and encoder sensor 212 therein, cited by the Examiner, relates to an encoder adapted to monitor the angular movement of the disc 13 using indicia 211. This does not disclose or suggest, for example, the acts of "interrupting the light beam traversing the coin path for a period in which the coin is moving through the light beam traversing the coin path," "counting a number of encoder pulses occurring during the period" and "comparing the counted number of encoder pulses to a plurality of stored numbers of encoder pulses corresponding to the particular coin denominations." The text corresponding to FIG. 16 states that the pulses from the encoder sensor are supplied to three coin-tracking down counters for separately monitoring the movement of each of the three coin denominations between fixed points on the sorting head and that such outputs can be used to separately control the actuation of bag-switching bridges. Rasmussen states, for example, that "when the last dime in a prescribed bath [*sic*: path] has been detected by the sensors S1-S3, the dime tracking counter CTC*D* is present to count the movement of a predetermined number of the indicia 211 on the disc periphery past the encoder sensor 212" (col. 12, lines 33-37). Thus, the text corresponding to FIG. 16 of Rasmussen appears to teach that the

denomination of the coin in the coin path is *already known* at the point at which the encoder sensor 212 is utilized. Rasmussen accordingly does not appear to disclose or suggest the acts recited in claim 22 or in claims 23-25, which are noted above.

Third, as noted above, Saarinen's teachings (*e.g.*, that "the measurement . . . only on the amount of light which is able to pass the coins when they traverse the measuring point"(col. 2, lines 32-35)), *teach away from* an act of, for example, "interrupting the light beam traversing the coin path for a period in which the coin is moving through the light beam traversing the coin path." Such evidence of teaching away constitutes evidence of non-obviousness (citations omitted) and Saarinen must be considered in its entirety, including portions that would lead one skilled in the art away from the claimed invention. Reconsideration and withdrawal of this rejection is requested for at least this reason.

Additionally, for the reasons noted above, which are incorporated herein (for brevity), Applicant submits that the modification and combination of the prior art in accord with the Examiner's suggestion would impermissibly change the principle of operation of Saarinen. The combination is, therefore, submitted to be non-obvious for at least this reason and reconsideration and withdrawal of this rejection is requested for at least this reason.

Still further, for the reasons noted above, which are incorporated herein (for brevity), Applicant submits that the modification and combination of the prior art in accord with the Examiner's suggestion would render Saarinen being modified unsatisfactory for its intended purpose. Accordingly, it is submitted that there is no suggestion or motivation to make the proposed modification (*see In re Gordon, supra*). Reconsideration and withdrawal of this rejection is requested for at least this reason.

Still further, for the reasons noted above, which are incorporated herein (for brevity), Applicant submits that the Examiner has not discharged the burden to set forth a *prima facie* case of obviousness under 35 U.S.C. § 103, as the Examiner has failed to demonstrate, using clear and particular evidence, a suggestion or motivation in the references supporting such combination. Reconsideration and withdrawal of this rejection is requested for at least this reason.

Also, for the reasons noted above, which are incorporated herein (for brevity), Applicant submits that the Examiner has not discharged the burden to set forth a *prima facie* case of obviousness under 35 U.S.C. § 103, as the Examiner has failed to identifying a basis why one

having ordinary skill in the art would have been realistically motivated to modify Saarinen in view of Rasmussen to arrive at the claimed invention. Reconsideration and withdrawal of this rejection is requested for at least this reason.

II. THE 35 U.S.C. § 103 REJECTION OF CLAIMS 3, 4, 11 AND 17

Further to the above, the Examiner alleges that Panzeri et al. (US 6,142,285) discloses "a similar device that includes a laser diode (see Figure 1 element 11) for the purpose of maximizing the response of the light detector (column 12 lines 1-11)" and alleges that "[i]t would have been obvious for a person of ordinary skill in the art at the time of the invention to modify Saarinen et al. in view of Rasmussen et al. by utilizing a laser diode, as disclosed by Panzeri et al., for the purpose of maximizing the response of the light detector."

1. CLAIMS 3 AND 4

All of the remarks noted with respect to the 35 U.S.C. § 103 rejection of claim 1 in Section I.1, above, are submitted to apply equally to the above-noted rejection of claims 3 and 4 and are incorporated herein by reference, but are otherwise omitted for brevity. Applicant submits that, in view of all of the grounds presented in traverse of the 35 U.S.C. § 103 rejection in Section I.1, Panzeri et al. is insufficient to make up for the deficiencies of Saarinen and/or Rasmussen, whether such references are taken singly or in combination. Reconsideration and withdrawal of this rejection is requested for at least the above-noted reasons.

Further, claim 3 recites that "the light beam comprises a laser beam" and claim 4 recites that "the light source is a single laser diode." As noted above, Saarinen requires a column of light providing gross illumination of an area. Moreover, Saarinen requires a "column-like light source (3) comprising two superposed column elements (3a, 3b), equal in size, for illuminating a coin (1)" and "a photosensitive sensors (4) that measures the amount of light sent by the column-like light source (3) that passes the coin (1) to convert this light into an electric signal dependent upon the diameter of the coin" (*see* claim 1). Saarinen further teaches that "[i]n the device according to the invention, variations in the luminosity of the light source due to aging or voltage variation, for instance, are compensated by the column-like light source that comprises two superposed column elements which are equal in size and in which the light amount emitted therefrom of which is separately adjustable for the calibration of the readings given by the sensor measuring the total amount of light." (col. 2, lines 43-50).

Saarinen thus *teaches away from* utilization of a laser or a single laser diode, as claimed. For example, claim 3 recites that "the light beam comprises a laser beam." Saarinen discloses that the measuring principle of the invention is that the measurement is only based on the amount of light which is able to pass the coins when they traverse the measuring point (col. 2, lines 32-34). A light beam comprising a laser beam would not permit light to pass the coins when they traverse the measuring point. Instead, the coin would block the light beam. Even with modification of the light emission and light sensing system of Saarinen, as advanced by the Examiner, such modifications would change Saarinen's disclosed "measuring principle," which accordingly render claims 3-4 non-obvious (*see, e.g.*, col. 2, lines 30-34). As to claim 4, which recites, for example, that "the light source is a single laser diode," Applicant further notes that Saarinen requires multiple, discrete light sources. This evidence of non-obviousness must be considered. In this regard, it is further submitted that the Examiner's proffered redesign of Saarinen to utilize "a laser diode" would render Saarinen unfit for its intended purpose Saarinen requires multiple (incoherent) light sources (*e.g.*, 3a, 3b).

Further, Panzeri et al. fails to disclose or suggest, for example, "a controller adapted to receive the encoder pulses from the encoder, the controller adapted to receive the light-detection signal from the light detector, the controller being adapted to determine the number of encoder pulses received during a period of non-receipt of the light-detection signal caused by each coin passing through the light beam, the controller being adapted to compare the determined number of encoder counts to the stored master denominating characteristic information upon resuming to receive the light-detection signal form the light detector." Instead, Panzeri et al. provides "a laser beam (13) is directed onto a face of a coin (4) . . . so as to obtain an indication of a characteristic of the face of the coin," such characteristic being used to identify the coin (*see* Abstract).

Thus, reconsideration and withdrawal of this rejection is requested for at least the above noted reasons.

2. CLAIM 11

All of the remarks noted with respect to the 35 U.S.C. § 103 rejection of claim 10 in Sections I.2 and II.1, above, are submitted to apply equally to the above-noted rejection of claim 11 and are incorporated herein by reference, but are otherwise omitted for brevity. Applicant submits that, in view of all of the grounds presented above in traverse of the 35 U.S.C. § 103

rejection, Panzeri et al. is insufficient to make up for the deficiencies of Saarinen and/or Rasmussen, whether such references are taken singly or in combination. Reconsideration and withdrawal of this rejection is requested for at least the above-noted reasons.

3. CLAIM 17

All of the remarks noted with respect to the 35 U.S.C. § 103 rejection of claim 16 in Sections I.3 and II.1, above, are submitted to apply equally to the above-noted rejection of claim 17 and are incorporated herein by reference, but are otherwise omitted for brevity.

Applicant further submits that Panzeri et al. fails to disclose or suggest, for example, in combination with the recited acts of claim 16, the acts of "generating a first light-detection output when the light beam traversing the coin path is incident upon the light detector" and "generating a second light-detection output when the light beam traversing the coin path is not incident upon the light detector." Panzeri et al. instead disclose that the coin 4 only intercepts "*a portion of this laser beam* 13 that passes between the laser diode 11 and the sensor array unit 3" (col. 7, lines 51-55)(emphasis added). Panzeri et al. thus do not disclose or suggest a condition wherein the light beam traversing the coin path is not incident upon the light detector or generating a second light-detection output based upon such condition.

Applicant submits that, in view of all of the grounds presented above in traverse of the 35 U.S.C. § 103 rejection, Panzeri et al. is insufficient to make up for the deficiencies of Saarinen and/or Rasmussen, whether such references are taken singly or in combination. Reconsideration and withdrawal of this rejection is requested for at least the above-noted reasons.

III. Conclusion

If there are any matters which may be resolved or clarified through a telephone interview, he Examiner is respectfully requested to contact the undersigned attorney at the number indicated.

It is respectfully submitted that new claims 26-27 are patentable over the applied combinations of references for at least the reasons noted above.

The Applicants submit that the claims are in a condition for allowance and action toward that end is earnestly solicited. A check is enclosed in the amount of ~~$50.00~~ $100.00 to cover the extra claim fee. Should any additional fees be required (except for payment of the issue fee), the Commissioner is authorized to deduct the fees from Jenkens & Gilchrist, P.C. Deposit Account No. 10-0447, Order No. 47171-00426USP1.

Respectfully submitted,

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Date

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